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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------------------|------------------------|
| 10/549,558 | 09/19/2005 | Rainer Pietig | DE030091US1 | 1461 |
| 24737 7590 12/31/2007 PHILIPS INTELLECTUAL PROPERTY & STANDARDS P.O. BOX 3001 BRIARCLIFF MANOR, NY 10510 | | | | |
| | | | EXAMINER HANNON, CHRISTIAN A | |
| | | | ART UNIT 2618 | PAPER NUMBER |
| | | | MAIL DATE 12/31/2007 | DELIVERY MODE PAPER |

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

| | | | |
|------------------------------|--|---------------------------------------|--|
| Office Action Summary | Application No. 10/549,558 | Applicant(s) PIETIG, RAINER | |
| | Examiner Christian A. Hannon | Art Unit 2618 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 October 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 and 11-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8, 11-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This action is response to applicant's response filed on 10/12/2007. Claims 1-8 & 11-15 are now pending in the present application. **This action is made final.**

Claim Rejections - 35 USC § 103

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
2. Claims 1-8 & 11-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Runyon (US 6,788,165).

Regarding claims 1 & 6, Runyon teaches a circuit arrangement for a mobile radio device and mobile radio device comprising a power divider for dividing a high-frequency transmit signal (Figure 5; Column 2, Lines 37-42) and comprising at least one phase shifter in contact with the power divider (Figure 5; Column 1, Lines 25-27) and the phase shifter for generating a phase difference wherein the phase shifter is a three port circulator (Column 1, Lines 35-38), wherein the phase shifter is arranged as a non-reciprocal phase shifter (Column 1, Lines 46-49), however Runyon fails to teach that high-frequency receive signals received from the antennas are applied to the power divider without undergoing any phase shift along a conductive path of the circuit arrangement in addition to antennas spatially arranged mutually apart. Runyon does however teach that using a non-reciprocal phase shifter will result in different phase values impacting a received signal versus a transmitted signal, along with antennas

arranged mutually apart in a different embodiment of his teachings (Column 1, Lines 46-49; Figure 13, Items 905A & 905B; Column 18, Lines 16-18). Therefore it would be obvious to one of ordinary skill in the art to utilize a phase shift in a transmitted signal in order to steer a beam of an antenna array, and then wish to have no phase shift imposed on a received signal in order to preserve reception of polarized signals integral to quality reception.

Regarding claims 2 & 7, Runyon teaches claims 1 & 6, characterized in that the antennas are dipole antennas, Runyon teaches antenna elements 905A & 905B of figure 13, the implementation of dipole antennas is a design choice left to the engineer, and is in no way novel.

Regarding claim 3, Runyon teaches claim 2, characterized in that the dipole antenna's axes are aligned parallel to each other, Runyon teaches antennas elements 905a & 905B of figure 13, the implementation of the antenna's parallel axes alignment, with out the support of any novel finding, is obvious to one of ordinary skill in the art as a design choice.

Regarding claim 4, Runyon teaches claim 1, in addition Runyon teaches that the phase difference between the transmit signals radiated by the antennas is 180 degrees at the most (Figure 5, Parameter limits table). Furthermore the placement between the antennas being of a distance smaller than the weave length of the transmitted/received signals is a design choice left to the engineer.

Regarding claim 5, Runyon teaches claim 4, wherein the distance between the antennas corresponds to one of two tenths of the wavelength of the transmit mode and

receive signals and in that the phase difference between the transmit signals radiated by the antennas is 100 to 145 degrees. The placement of the antennas is a design choice left to a system engineer. Furthermore Runyon teaches the range 0-180 degrees encompassing the applicant's range of 100 to 145 degrees (Column 2, Lines 45-49).

Regarding claim 8, Runyon teaches claim 7, characterized in that the antennas of the mobile radio device are arranged at different distances from the head of a user of the mobile radio device, the examiner contends that due to spatial constraints a users head would be forced to be placed at a distance where the distance from one's head to the antennas was at varied distances.

Regarding claims 12 & 13, Runyon teaches claims 1 & 6, wherein the three-port circulator has first and second conductive paths, wherein the first path as a conductive element and applies a phase shift to the transmit signals proportional to a length of the conductive element and wherein the second path does not apply any phase shift to the receive signals (Column 3, Lines 36-44; Figure 5, Parameter limits table).

Regarding claims 14 & 15 Runyon teaches claims 1 & 6, wherein a conductive path between another one of the antennas and the power divider does not have a phase shifter, it is obvious and well know in the art to remove an element and its function, for example in order to "State 0" of figure 5's Parameter limits table, one could remove the phase shift item ϕ_1 , as ϕ_1 is not required to induce a phase shift in this state, thereby eliminating the dual state, but still retaining functionality. Therefore with no specified purpose or novel advantage claimed the claim language is rendered obvious in view of Runyon.

Response to Arguments

3. Applicant's arguments with respect to claims 1-8 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

4. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

5. A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christian A. Hannon whose telephone number is (571) 272-7385. The examiner can normally be reached on Mon. - Fri. 8:00 AM - 4:30 PM.

Application/Control Number:
10/549,558
Art Unit: 2618

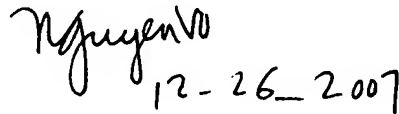
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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ed Urban can be reached on (571) 272-7899. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



C. A. Hannon
December 10, 2007



NGUYENT.VO
PRIMARY EXAMINER